

Work Order ID 60155

Monday, June 28, 2010 10:54:30 AM



Page 1

Item ID: D412-711-101

Accept



Setup Start



Revision ID:

Item Name: Replacement Bubble Window

Stop



Start Date: 6/28/2010 Start Qty: 2.00



Cust Item ID:

Required Date: 7/2/2010 Req'd Qty: 2.00

Customer:

PRELIMINARY ISSUE

Reference:

Approvals: Process Plan: MFDate: 10-6-28 Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D412-711-101

preliminary

A

100



Thermoform

HAND FINISHING THERMOFORMING

0.00

Memo

0.00

Thermoforming Machine

Set up Machine as per folio FTA 077 and D711W program

BB 10/06/28

110



Thermoform

HAND FINISHING THERMOFORMING

0.00

Memo

0.00

Thermoforming Machine

Cut Blanks to 36" by 39"

X2 BB 10/06/28

120



Thermoform

THERMOFORMING MACHINE

0.00

Memo

0.00

Thermoforming Machine

Thermoform as per Dwg. D412-711-101 using DT 9640 and Folio FTA 077

Dwg. Rev. RELIM

Folio Rev.

A.QY 10/06/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 60155

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Item ID: D412-711-101

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Customer:

Reference:

Run Start

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

0.00

Quality Control

1) Check Surface finish for undesired marks, voids, dimples etc. 2) Check depth of bubble to ensure conformity to drawing tolerances.

(x2) Dh 10/06/28

140

QC8- Inspect parts - second check

0.00

QC

Memo

2 per prelim x2
Qty for testing #2 windows
#1 inspected also.

Quality Control

**ENGINEERING
APPROVAL**

2

10/07/28
Kw.A.

150

HAND FINISHING THERMOFORMING

0.00

Thermoform

Memo

0.00

Thermoforming Machine

1) Trim off excess flange material
blemishes 2) Buff out any light scratches or
3) Etch part number and batch number

(x2) BB 10/06/28

PTO →

Dart Aerospace Ltd

W/O: 60155		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
10/06/28	150	Allow extra 3/4" material on flange area for testing purpose only. N/A	Wk	10/06/28	2	10.06.28	10/06/28	
		parts now trimmed to Rev. A						

Part No: D412-711-101 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 60155

Monday, June 28, 2010 10:54:30 AM

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Item ID: D412-711-101

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Setup Start

Revision ID:

Stop

Item Name: Replacement Bubble Window

Start Date: 6/28/2010 Start Qty: 2.00

Cust Item ID:

Required Date: 7/2/2010 Req'd Qty: 2.00

Customer:

Reference:

Run Start

Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

X2 10/04/28

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

1) Visually inspect for clarity, and proper formation.

**ENGINEERING
APPROVAL**

2

J. 10/27

180

Identify as per dwg & Stock Location: 19/12

0.00



Packaging

Memo

0.00

Packaging

C. 10/17/27 2

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 60155

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Item ID: D412-711-101

Accept



Setup

Start



Revision ID:

Stop



Item Name: Replacement Bubble Window

Start Date: 6/28/2010 Start Qty: 2.00



Cust Item ID:

Required Date: 7/2/2010 Req'd Qty: 2.00



Customer:

Reference:

Run

Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/07/28, *[Signature]**Pl 10-7-27*
(2)

POSITIVE RECALL

EFFECTIVE 10/28/28 AUTH 100926RELEASED [Signature] DATE 10/28/26

Qty 2

to Rev. A

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, June 28, 2010 10:54:29 AM

Page 1

Work Order ID: 60155



Parent Item: D412-711-101



Parent Item Name: Replacement Bubble Window

Start Date: 6/28/2010

Required Date: 7/2/2010

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 06-02-01 JLM
Manufacture in-house 10/06/28 DL

IPP Rev. B.

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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MACRLICS.236

Purchased

No

sf

65.0000

16

32



Plexiglass G .236"



Location

Loc Qty

Loc Code

therm

65

65

113571

33 (x2) 10/06/28-

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 60155
Description: 412 Replacement Bubble Window	Part Number: D412-711-10.1
Inspection Dwg: D412-711-10 Rev: PRELIM	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than _____"	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: <i>BB</i>	Date: 10/06/28
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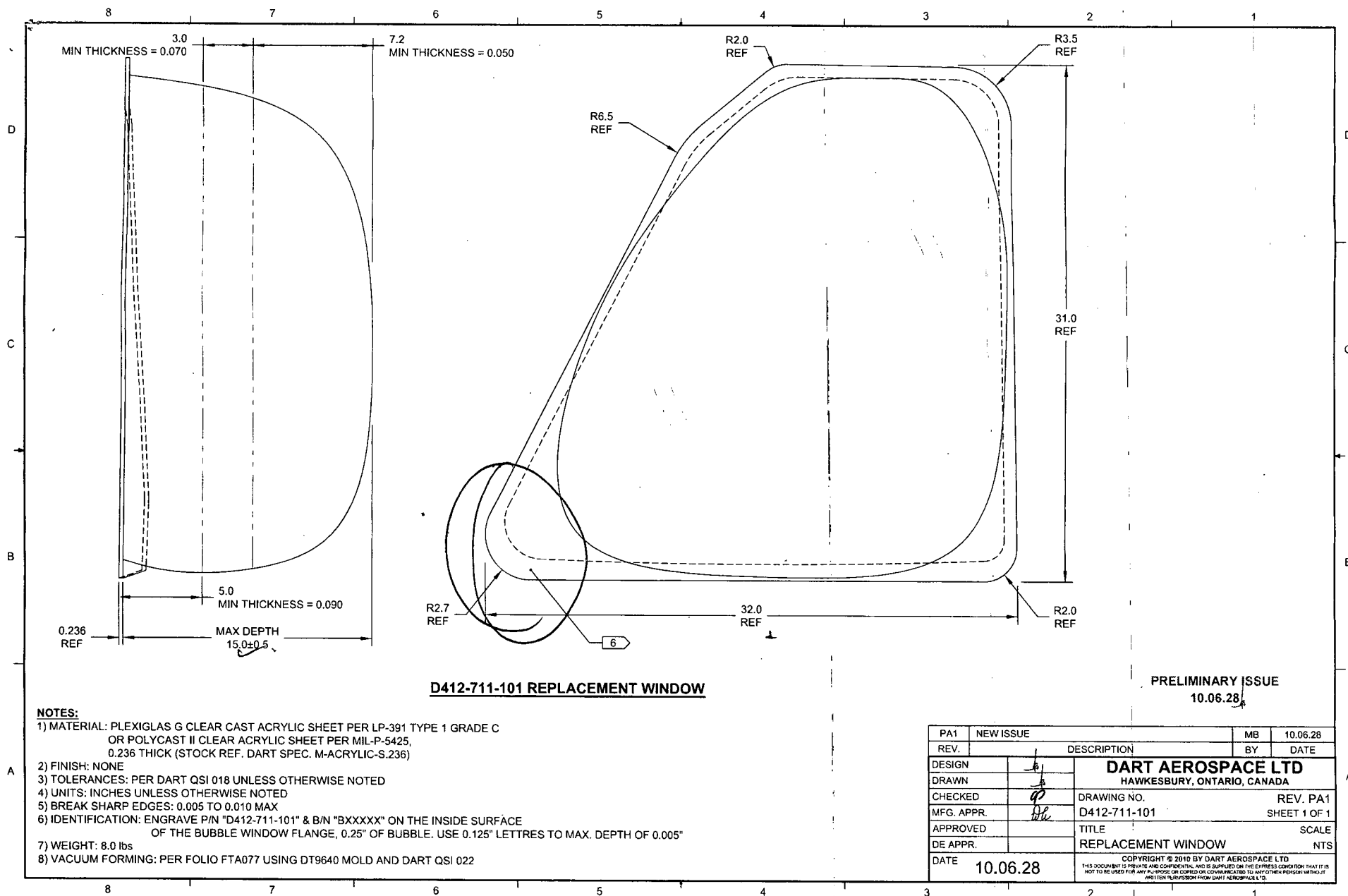
TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
31"	Ref	32.5	✓		<i>See Revised FAI to released drawing</i>	
32"	Ref.	33.375	✓			
0.090"	Min	.096	✓			
0.070"	Min	.090	✓			
0.050"	Min	.076	✓			
15"	± .5	15.250	✓			

Measured by: <i>BB</i>	Date: 10/06/28
Audited by: <i>[Signature]</i>	Date: 10.06.28
Preliminary Approval: _____	Date: _____

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.14



SABIC
innovative
Plastics

سابك
sabic

SABIC Polymershapes

1250 OLD INNES RD. 519 OTTAWA, ONT. K1B 5L3
TEL: 613 745 7043 FAX: 613 745 8163

CERTIFICATE OF COMPLIANCE

SOLD TO: DART AEROSPACE

DATE: 1/5/2010

YOUR PURCHASE ORDER : 11025

OUR SHIPPER NO: O89540

LINE ITEM # : 1

QUANTITY: 5 SHEETS

DESCRIPTION: 236 X 60 X 96 PLEXIGLAS GM

THESE PARTS WERE MANUFACTURED IN ACCORDANCE WITH: PLEXIGLAS GM ASTM-
D4802 FORMALLY LP 391

THIS IS TO CERTIFY THAT THE MATERIAL FINISHES AND FUNCTIONAL REQUIREMENTS
OF THE ABOVE LISTED PARTS ARE IN ACCORDANCE WITH THE REFERENCE
PROCUREMENT SPECIFICATIONS, CONTROL DRAWINGS OR PARTS DESIGNATION AND
LATEST REVISIONS AS REFERENCED ON THE SUBJECT PURCHASE ORDER.

AUTHORIZED REPRESENTATIVE SIGNATURE

Jon Caldwell

JON CALDWELL
BRANCH MANAGER

Receiving Report

Date: 10/01/06
 Supplier: SABIC

Batch No: M113571
 Dart P/O: 16026

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☒ No ☐ N/A ☐
 Shipment Complete: Yes ☒ No ☐ N/A ☐
 QC6 Inspection 8 N/A ☒
 Work Order 16026 N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (if shipment OK) Level 12 [Signature]

Production/Admin: 10/01/06
 Date [Signature]
 Received/Costing [Signature]
 Initial [Signature]

Location _____

DART AEROSPACE LTD		Work Order:	60155
Description: 412 REPLACEMENT BUBBLE (611000)		Part Number:	D412-711-101
Inspection Dwg: 412-711-101 Rev: P		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than _____"	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: <i>JB</i>	Date: 10/06/28
-------------------------------	-----------------------

TRIMMING SECTION

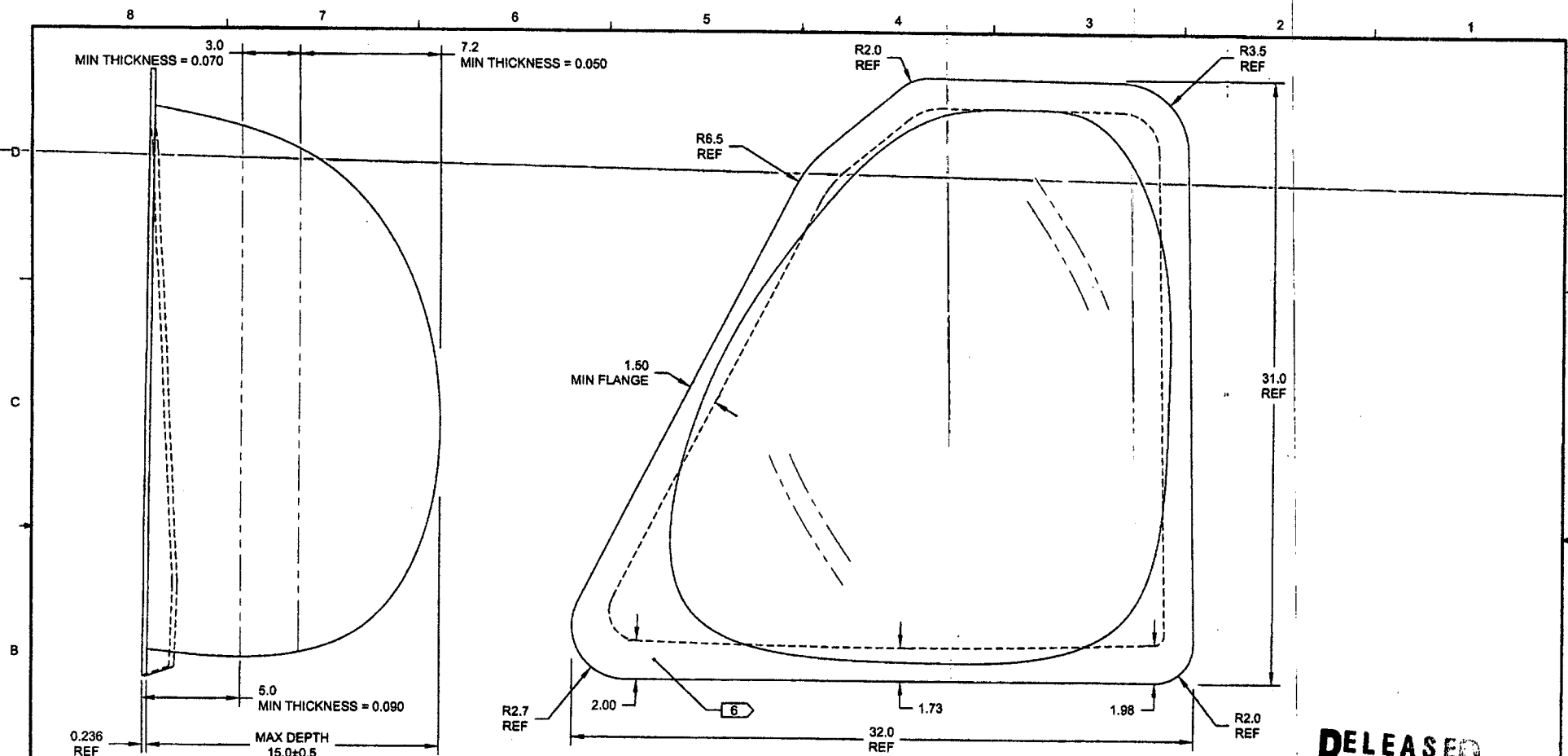
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
31	REF.	31.125	✓			
32	REF	32.5	✓			
15	+/- .5	15.250	✓			
.090	Min	.100	✓			
.070	Min	.093	✓			
.050	Min	.074	✓			
	#2					
31		31.065				
32		32.5				
15		15.375				
.090		.091				
.070		.088				
.050		.070				

Measured by: <i>JB</i>	Date: 10/07/26
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Audited by: <i>J</i>	Date: 10/07/27
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Preliminary Approval:	Date:
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Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	



D412-711-101 REPLACEMENT WINDOW

NOTES:

- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425,
0.236 THICK (STOCK, REF. DART SPEC. M-ACRYLIC-S.236)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ENGRAVE P/N "D412-711-101" & B/N "BXXXXX" ON THE INSIDE SURFACE
OF THE BUBBLE WINDOW FLANGE, WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX. DEPTH OF 0.005"
- 7) WEIGHT: 8.0 lbs
- 8) VACUUM FORMING: PER FOLIO FTA077 USING DT9640 MOLD AND DART QSI 022

RELEASED
2010-06-30

W/060155

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	MB	10.06.28
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.06.28		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D412-711-101
TITLE REPLACEMENT WINDOW
SCALE NTS

REV. A
SHEET 1 OF 1

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